



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: T- 4358

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-04-17-02 Date: 18-04-2017
Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.
Agency : Technical Manager (West), KRIDL, BBMP, Bangalore
Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 17-04-17
Sample ID No : 2017-04-17-02-01
Sample Type : Birla super 53 grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification, IS 4031 (Part 1,2,3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11, DETERMINATION OF DENSITY, Clause 6
Date of test : 17-04-17

SLNo.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.6	—
2	Finess by Air permeability method (m^2/kg , Min)	268.5	225 m^2/kg , Min
3	Density (gm/cc)	3.2	—
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	195 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
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Prepared by
Harshitha

Harshitha
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Karthik Rechan
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Quality Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-04-17-02 Date: 16-05-2017
Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.
Agency : Technical Manager (West), KRIDL, BBMP, Bangalore
Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 17-04-17
Sample ID No : 2017-04-17-02-01
Sample Type : Birla super 53 grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test : 17-04-17

Compressive Strength			
SLNo.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	27.5N/mm ²	Not less than 27 N/mm ²
2	7 Days	39.5N/mm ²	Not less than 37 N/mm ²
3	28 Days	57.5N/mm ²	Not less than 53 N/mm ²

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-04-17-02 Date: 19-04-2017
Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bnagalore.
Address : Yelahanka Satellite Sub Division, BBMP, Bnagalore.
Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.
Agency : Technical Manager (West), KRIDL, BBMP, Bangalore
Customer Reference : BBMP/EE(YNK.D)/WO/146/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 17-04-17
Sample ID No : 2017-04-17-02-02(a)
Sample Type/ Size : 20mm down size coarse aggregate
Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties
Date of test : 17-04-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	200	200	4	96	90-100
3	10 mm	2390	2590	51.8	48.2	25-55
4	4.75 mm	2300	4890	97.8	2.2	0-10
5	Pan	110	5000	100	0	-

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P. K. Kishore

**TEST REPORT ON COARSE AGGREGATES**

Lab ID : CP-2017-04-17-02
Sample ID No : 2017-04-17-02-02(a)

Date: 19-04-2017

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.8	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.4	
3	Specific Gravity	2.66	—
4	Bulk Density(Loose) (Kg/l)	1.53	—
5	Bulk Density(Compacted) (Kg/l)	1.57	—
6	Water Absorption(%)	0.25	—
7	Aggregate crushing Value(%)	23.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.3	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Quality Manager



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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-04-17-02 Date: 19-04-2017
 Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
 Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.
 Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.
 Agency : Technical Manager (West), KRIDL, BBMP, Bangalore
 Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18
 Source of Sample : Sample supplied by Agency
 Sample condition : Satisfactory
 Date of Receipt : 17-04-17
 Sample ID No : 2017-04-17-02-02(b)
 Sample Type : 40mm down size coarse aggregate
 Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
 IS: 2386 :1963(Part - 1,3,4) RA2011
 IS 2386 Part 1: Particle Size and Shape
 IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
 IS 2386 Part 4: Mechanical Properties
 Date of test : 17-04-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	302	302	2.0	98.0	90-100
3	20 mm	5390	5692	37.9	62.1	30-70
4	10 mm	4536	10228	68.2	31.8	10-35
5	4.75 mm	4400	14628	97.5	2.5	0-5
6	Pan	372	15000	100.0	0	---

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Certificate No.: T-4358

TEST REPORT ON COARSE AGGREGATES

Lab ID

: CP-2017-04-17-02

Date: 19-04-2017

Sample ID No

: 2017-04-17-02-02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.67	—
4	Bulk Density(Loose) (Kg/l)	1.47	—
5	Bulk Density(Compacted) (Kg/l)	1.49	—
6	Water Absorption(%)	0.19	—

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2017-04-17-02 Date: 19-04-17
Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.
Agency : Technical Manager (West), KRIDL, BBMP, Bangalore
Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 17-04-17
Sample ID No : 2017-04-17-02-03
Sample Type : Fine Aggregate
Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
Date of test : 17-04-17
Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0	100	100	100	100	100
2	4.75 mm	86	86	8.6	91.4	90-100	90-100	90-100	95-100
3	2.36 mm	201	287	28.7	71.3	60-95	75-100	85-100	95-100
4	1.18 mm	135	422	42.2	57.8	30-70	55-90	75-100	90-100
5	600 micron	160	582	58.2	41.8	15-34	35-59	60-79	80-100
6	300 micron	230	812	81.2	18.8	5-20	8-30	12-40	15-50
7	150 micron	140	952	95.2	4.8	0-10	0-10	0-10	0-15
8	Pan	48	1000	100	0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2017-04-17-02
Sample ID No : 2017-04-17-02-03

Date: 19-04-17

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.75	—
2	Specific Gravity	2.58	—
3	Material finer than 75 micron(%)	5.65	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Certificate No.: T- 4358

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-05-09-03 Date: 31-05-17
 Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
 Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.
 Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.
 Agency : Technical Manager (West), KRIDL, BBMP, Bangalore
 Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 09-05-17
 Sample ID No : 2017-05-09-03-02
 Customer ID : Cement Concrete
 Sample Type /Size : 150X150X150 mm
 Sample grade/Age : M20 / 28 Days Compressive Strength
 Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 31/05/2017

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	Cement Concrete	M20	03/05/2017	31/05/2017	150.11 X 150.17 X 150.15	22542	8.298	504.9	22.4	22.4
2	Cement Concrete	M20	03/05/2017	31/05/2017	150.22 X 150.26 X 150.29	22572	8.389	498.8	22.1	
3	Cement Concrete	M20	03/05/2017	31/05/2017	150.19 X 150.18 X 150.20	22556	8.313	514.3	22.8	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-05-09-03 Date: 10-05-17

Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bnagalore.

Address : Yelahanka Satellite Sub Division, BBMP, Bnagalore.

Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.

Agency : Technical Manager (West), KRIDL, BBMP, Bangalore

Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 09-05-17

Sample ID No : 2017-05-09-03-01

Customer ID : Cement Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 10/05/2017

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Cement Concrete	M20	03/05/2017	10/05/2017	150.21 X 150.15 X 150.19	22554	8.345	412.7	18.3	18.1
2	Cement Concrete	M20	03/05/2017	10/05/2017	150.22 X 150.24 X 150.29	22569	8.435	404.0	17.9	
3	Cement Concrete	M20	03/05/2017	10/05/2017	150.19 X 150.24 X 150.22	22565	8.322	408.4	18.1	

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID : CP-2017-06-03-01 Date: 06-06-17

Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.

Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.

Project Name : Providing Chainlink fencing to remaining portion of proposed park near ambhabhavani temple road and its development of Attur ward no.03.

Agency : Technical Manager (West), KRIDL, BBMP, Bangalore

Customer's Reference : BBMP/EE(YNK.D)/WO/146/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 03-06-17

Sample ID No : 2017-06-03-01-01

Sample Type /Size : CC Kerb Stone/ 450*165*400mm

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 03/06/2017

SL No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm ²)	(N/mm ²)	(N/mm ²)
1	A	100.02	165.44	8.864	7856	142.1	18.1	16.8	21.0
2	B	100.04	165.45	8.793	7859	143.2	18.2	18.2	22.8
3	C	100.03	165.49	8.815	7857	144.1	18.3	18.3	22.9

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